



NDCEE

National Defense Center for Energy and Environment

Program Review

Mr. Tom Delaney, PE
Director, Strategic Development



DoD Executive Agent

Office of the
Assistant Secretary
of the Army
(Installations and
Environment)

The NDCEE is operated by:  *Concurrent Technologies Corporation*

Technology Transfer – Supporting DoD Readiness, Sustainability, and Transformation

NDCEE Mission Elements

- **Research, Development, Test & Evaluation**
 - Serve as a national resource for testing and validating environmental, safety, and occupational health (ESOH) technologies and processes
 - Support applied research and development, where appropriate, to address ESOH challenges and priorities
- **Technology Transfer**
 - Transition environmentally acceptable materials and processes to defense industrial activities
 - Provide training that both optimizes and supports the use of new, environmentally acceptable technologies

Scope

- Hazardous waste treatment
- Management of RCRA-type wastes
- Waste minimization
- Municipal solid waste and incineration issues
- Management and treatment of hazardous air pollutants
- Medical waste disposal
- Mixed waste management and disposal
- Remediation of contaminated sites
- Chemical and biological weapons destruction
- Recycling of materials
- Water treatment issues and water use and reuse
- Pollution of ground and surface water
- Above ground and underground storage tanks
- Nuclear waste management and disposal
- Corrosion prevention and control
- Solvent substitution and aqueous based cleaners
- Ozone depleting substances
- Location, removal, and demilitarization of UXO
- Demanufacturing of electronic equipment for recycle and reuse (DEER2)
- Other initiatives as agreed to by the DOD and NDCEE

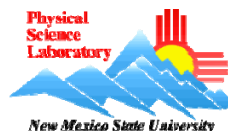
NDCEE Contract Summary

- DoD Executive Agent: Mr. Tad Davis, DASA-ESOH
- Contract Type and Value: ID/IQ Cost Plus Fixed Fee; \$350M
- Contract Period: December 4, 2003 – December 3, 2008
- Reimbursable Tasking Mechanism
 - Multi-agency Interdepartmental Purchase Request (MIPR) or Interagency Agreement (IA)
 - Open to all government agencies
- Low (2%) contracting fee and streamlined contracting process
- Government Program Management Office
 - NDCEE Program Director: Hew Wolfe (Col, Ret.), DASA(ESOH)
 - NDCEE Program Manager: Charles (Chuck) Lechner, Ph.D., DASA(ESOH)
 - Contracting Officer's Representative: Tom Moran, DASA(ESOH)

Contractor Team



Booz | Allen | Hamilton



Representative NDCEE Project Areas

- Pollution Prevention
 - Solvent substitution
 - NESHAP compliance
 - HazMat elimination
 - Reduced worker exposure to toxic materials



Water-Reducible CARC transitioned to Combat Equipment Group–Afloat, Goose Creek, SC, reducing hazardous air emissions and worker exposure

- Corrosion Prevention & Control



In preparation for overseas deployment, Ft. Hood vehicles are treated with a corrosion inhibitor, extending vehicle service life and increasing mission readiness

Representative NDCEE Project Areas

- Energy Management and Technologies
 - Facility energy assessments
 - Fuel cells
 - Renewable energy technologies
 - Clean fuels

- Safety Enhancement
 - Safety management systems
 - Best practices for worksite-based safety and health
 - Mishap reduction initiatives



A rehydration/catalyst technology demonstrated to increase the capacity and extend the life of valve regulated lead acid batteries used in satellite control network stations at Onizuka Air Force Station



The DoD Voluntary Protection Program (VPP) Center of Excellence assists DoD installations and agencies in achieving and maintaining OSHA VPP Star Status

**The NDCEE Serves as a National Resource for
all Military Services, DoD and Other Government
Agencies, Academia, and Industry**

For additional NDCEE information, please visit:

www.ndcee.ctc.com

or

www.denix.osd.mil

Corn-Hybrid Polymer (CHP) Blasting

Description:

- Low pressure blasting system for coating removal from delicate substrates using corn-hybrid polymer blast media.

Benefits/Impact:

- Environmentally acceptable coatings removal
- Improved human health by replacing manual sanding

Accomplishments:

- No substrate damage, resulting in the elimination of unnecessary rework
- Blast medium is organic, nontoxic, biodegradable, classified as nonhazardous and generates minimal waste
- Meets MIL SPEC (MIL-P-85891) for Type VII plastic media
- Considered a “drop-in” replacement for many plastic media stripping systems (May eliminate the use of chemical strippers)
- Preliminary ECAM cost savings range: \$20,000 - \$1.5 million, for various components and facilities (results available upon request)



A ship radome section (left) is stripped at low pressure (right) using the CHP blasting process

Portable Laser Coating Removal System

Objective:

- Evaluate ability of hand-held laser systems to supplement existing small-area depainting processes on components and aircraft at depot and field levels.

Benefits/Impacts:

- Increase production rate
- Replace Methylene Chloride, MEK, and PMB uses
 - Reduce hazardous waste generation
 - Reduce handling and storage and worker exposure to known carcinogenic materials

Accomplishments:

- Mechanical test results were positive.
- Handheld laser systems implemented at 3 Air Force depots.
- Ft. Rucker and AED evaluating applications.



Robotic Laser Coating Removal System

Objective:

- Develop robotic laser coating removal system to replace current chemical/mechanical coating removal methods used on large off-equipment components

Benefits/Impacts:

- Reduce stripping time and replace chemical strippers, MEK, PMB and wheat starch
- Potential reductions at OC-ALC include:
 - 13,200 gallons paint stripper
 - 341,260 pounds of solid waste
 - 4003 pounds of VOCs
 - 1,815,000 gallons contaminated waste water
 - **Potential \$390K savings in annual environmental costs**



**Navy Compliance with National Emission
Standards for Hazardous Air Pollutants
(NESHAP) for Shipbuilding and Ship
Repair**

Supporting Readiness, Sustainability, and Transformation

Background

- NESHAP for Shipbuilding and Ship Repair
 - Promulgated under section 112(d) of the Clean Air Act
 - Amended in 1990
- U.S. Environmental Protection Agency (EPA) is in the process of assessing the risk to the public
 - Conducted residual risk test in 2003
 - Developed a data-gathering and analysis plan
 - Obtaining more refined data
 - Processes
 - Emissions
 - Emission control equipment
 - Cost
 - Plans to develop a residual risk rule
- Need to enable cost-effective compliance to the residual risk ruling

Objectives

- Coordinate communication between Navy and commercial shipyards on the status of and preparation for the residual risk ruling
- Identify and evaluate environmental control technologies to comply with the residual risk ruling
- Determine economic impact of residual risk ruling to the shipbuilding industry



Shielded Metal Arc Welding